

8. *Reports on the Marine Mollusca in the Collections of the South African Museum.*—By J. R. LE B. TOMLIN, M.A.

(With Plates XXV, XXVI.)

III. Revision of the South African NASSARIIDAE (*olim* NASSIDAE).

Now that it has been found that *Nassa* Bolten (1798)—applied to the group of *Thaididae* more generally known as *Iopas* H. and A. Adams—anticipates Lamarck's usage by a year, we have no option but to discard *Nassa* Lam. The next available name appears to be *Nassarius* Duméril (1806), and this, together with *Nassariidae* for the family, has been in use in literature for some eight or nine years. The matter is very fully set forth in Proc. Malac. Soc. London, vol. xii, p. 82.

I have not attempted to distribute the species into subgenera. The limits of those in use seem to be rather artificial. For convenience of reference the species are placed in alphabetical order, and there is also a complete index at the end, as well as a short bibliography.

As regards geographical range much, I might almost say everything, remains to be done. The fauna of a few favourite and accessible strands is adequately known, mainly of course from dead and more or less beach-worn material. When "live" examples, dredged or otherwise, do turn up, it is frequently a matter of the greatest difficulty to appraise their relationship with the worn types or battered series which constitute all that is hitherto available.

In the ensuing list I have tried to gather together all the published localities, and have added a few which I can vouch for from various sources.

Gen. NASSARIUS Duméril.

Nassarius algidus (Reeve).

- Nassa algida* Reeve. Conch. Icon., viii, pl. xxii, figs. 145*a*, *b*, Dec. 1853. Moreton Bay (Strange).
 " " " F, p. 5. Natal.
 " " " G, p. 368. Natal.
 " " " J, p. 111, pl. i, fig. 17. Durban (Burnup).

Types (3) in British Museum.

Smith (J.) discusses the variation in size, colouring and sculpture, of Durban specimens. The South African Museum has a very fresh beach example from Durban (S.A.M., No. 14039) measuring 22 mm. in length, and fine live specimens, from 24–27 mm., dredged in 12–14 fathoms off the Tugela R. (S.A.M., No. A6398). The opercula are not very perfect but closely resemble that of *N. arcularia* figured by Quoy and Gaimard in the "Voyage of the Astrolabe," Atlas Moll., pl. xxxii, fig. 4. Their periostracum is either black or very dark chestnut-brown.

Nassarius arcularius (L.).

Buccinum arcularia L. Syst. Nat. ed. x, p. 737, 1758. Loc. unknown.

" " " A, p. 122. Very common in Natal Bay.

Nassa arcularia L. E, p. 148. Rarely found at the Cape.

" " " F, p. 12. Port Elizabeth, seldom.

There are three from Durban in the British Museum, and M'Clelland has shown me specimens collected in Durban harbour. A very wide-spread species in the Indian and Pacific Oceans. In the South African Museum there are specimens from Natal, Delagoa Bay and Mozambique Island.

Nassarius babylonicus (Watson).

Nassa babylonica Watson. J. Linn. Soc., Zool., xvi, p. 366.

" " " "Challenger" Rep., xv, p. 185, pl. xi, fig. 8, 1886, Philippines, 375f.

" " von Martens. K, pp. 100, 167, fig., East Africa, 1134–1644 metres.

A dead shell, in good condition, was dredged by the s.s. "Pieter Faure" 24 miles N. by E. of Cape Natal in 440 fathoms (S.A.M., No. A3445).

Nassarius bicallosus (Smith).

Nassa bicallosa Smith. J. Linn. Soc., Zool., xii, p. 543, pl. xxx, fig. 1, Sept. 19, 1876. W. Australia (Brazier); Swan River; Cape Natal.

- Nassa laevigata* Marrat. On Some Proposed New Forms in the
Genus *Nassa*, p. 3, pl. i, fig. 7, 1877.
Hab.?
,, *glabella* Marrat (*non* Sow.). *Loc. cit.*

The tablet of three Cape Natal shells in the British Museum is marked underneath by Smith himself as his types, and it may therefore be well formally to declare Natal as the type locality.

The South African Museum has one fresh but dead shell dredged off the Tugela River in 24 fathoms (S.A.M., No. A6399). This species is very close to *algidus* (Rve.) and seems to be mainly differentiated by a regular series of blunt tubercles along the top of the last two whorls. In *algidus* this feature is absent or very nearly so. *N. bicallosus*, in the specimens I have seen, is unicolorous and narrower in proportion to length. *N. algidus* has red streaks and blotches.

Nassarius capensis (Dunker).

- Buccinum capense* Dunker. Zeitschr. f. Malakozool., iii, p. 110,
July 1846. Cape of Good Hope.
,, ,, ,, A, p. 122. Cape coast, common.
Nassa (Alectrion) pulchella A. Adams. Proc. Zool. Soc., 1851, p. 108,
Dec. 7, 1852. Cape of Good Hope (Mus. Cuming).
,, ,, *serotina* A. Adams. *Loc. cit.* Australia (Mus.
Cuming).
Buccinum (Nassa) capense Dunker. C, p. 138. Algoa Bay.
Nassa cerotina Reeve. Conch. Icon., viii, pl. xvi, fig. 107, Dec.
1853 (error for *serotina*).
,, *pulchella* A. Adams. D, p. 4. Port Elizabeth.
,, *cerotina* ("A. Adams") Reeve. D, p. 4. Port Elizabeth.
,, *capensis* Dunker. F, p. 12. Cape of Good Hope.
,, *serotina* A. Adams. F, p. 12. Simon's Bay, Port Elizabeth.
,, ,, ,, N, p. 23. Port Alfred.
Alectrion capensis Dunker. P, p. 51. Algoa Bay, Port Alfred,
Albany.
,, *cerotina* ("A. Adams") Reeve. P, p. 52. Port Alfred.

Types of *capensis* (2), *pulchella* (3) and *serotina* (4) are in the British Museum.

The British Museum has a series of 15 received without any name from Krauss, in 1840.

Also seen from East London (Kimberley Museum and British Museum), Jeffreys Bay (Grahamstown Museum), Kalk Bay (Kimberley Museum), Coffee Bay (Grahamstown Museum). The South African Museum has specimens from False Bay, Sandown Bay, Mossel Bay, Algoa Bay, and a very small form which was collected at the mouth of the Tongaat River.

The name *serotina* was applied to the brown and red forms which are unicolorous, but for a light zone at the base of the body whorl. These are certainly colour phases of *capensis*.

Nassarius circumtextus (Martens).

- Nassa* (*Amycla*) *circumtexta* Martens. K, p. 27, pl. iii, fig. 18, 1903.
Francis Bay, Algoa Bay,
Agulhas Bank and Simon's
Bay at various depths
from 70 to 117 metres.
- „ (*Tritia*) *trifasciata* A. Adams. Proc. Zool. Soc., 1851, p. 113,
Apr. 29, 1853. Vigo Bay
(M'Andrew).
- „ *trifasciata* A. Adams. F, p. 13. Port Elizabeth.
- „ „ „ L, p. 228, pl. iv, fig. 2. Off Nanquas
Peak, 11½ m., in 58 f.
- „ *analogica* Sowerby. L, p. 219, pl. iv, fig. 3. Off Cape
Infanta, 6½ m., 40 f. mud.
- „ *trifasciata* A. Adams. Q, p. 6. Off Cape Infanta, 3 m., 34 f. ;
off Cape Barracouta, 10 m., 40 f.

Types of *trifasciata* (3) and of *analogica* (1) in British Museum. Sowerby (*loc. cit.*) queries the Crag fossil, *Nassa labiosa* J. Sow., as conspecific.

The name *N. trifasciata* is preoccupied by a species of Gmelin.

Smith * was undoubtedly right in considering Sowerby's *analogica* a synonym.

Martens queried the identity of his *circumtexta* with *trifasciata*. Probably the Vigo Bay locality is an error.

I have a dead shell given me by Connolly from Camps Bay. The South African Museum has a long series from the Saldanha Bay, False Bay, Agulhas Bank and Algoa Bay areas, 22 to 80 fathoms.

* Ann. Natal Govt. Mus., i, pt. 1, p. 36.

Nassarius coronatus Bruguière.

- Buccinum coronatum* Brug. Encycl. Méth., Vers, i, p. 277, 1789.
Madagascar and Indian Ocean.
" " " A, p. 123. Natal coast, rare.
Nassa coronata Brug. F, p. 12. Natal coast (Krauss).

The British Museum received Natal specimens from Krauss in 1840, and also has specimens from Durban. McClelland also has shown me Durban examples.

This species has a very wide range throughout the Indian Ocean and as far as the Philippines.

The South African Museum has specimens from the Natal coast, 14 to 24 fathoms.

Nassarius desmoulioides (Sowerby).

- Nassa desmoulioides* Sow. L, p. 219, pl. iv, fig. 1, July 8, 1903.
Umhloti River-mouth bearing N.W.
 $\frac{1}{2}$ W., 15 $\frac{1}{2}$ m., 100 f.
" " " O, p. 36. *Loc. cit.*

The South African Museum has examples from the Agulhas Bank, Algoa Bay and Natal coast, 40 to 124 fathoms, including cotypes from the original locality. Type in British Museum.

Nassarius eusulcatus (Sowerby).

- Nassa eusulcata* Sow. Marine Invest. S. Africa, ii, p. 94, pl. ii,
fig. 8, Sept. 25, 1902. Mouth of Tugela
River, N. by W., 18 m., 46 f. mud.
" " " M, p. 373. *Loc. cit.*

Natal coast, 40 to 55 fathoms, including cotypes from the original locality (South African Museum). Type in British Museum.

Nassarius fenestratus (Marrat).

- Nassa fenestrata* Marrat. On some Proposed New Forms in the
Genus *Nassa*, p. 10, 1877. Philippines,
Moreton Bay, Mozambique. (M. refers
to Reeve's monograph of *Nassa*, pl. vii,
fig. 47.)
" *fenestrata* Marrat. H, p. 5. Natal (Gibbons).

In the South African Museum, labelled Natal.

Durban specimens are in the British Museum. See under *N. marginulatus* Lam.

Nassarius filmerae (Sowerby).

Nassa filmerae Sow. I, p. 2, pl. i, fig. 5, Apr. 2, 1900. Pondoland.
 „ „ „ M, p. 373. Pondoland.

The single example in the British Museum, received from Sowerby, may be the type, but is not so marked.

Specimens marked cotypes, ex coll. Becker, are in the South African Museum.

Nassarius gaudiosus (Hinds).

Nassa gaudiosa Hinds. Voy. "Sulphur," Zool., ii, p. 36, pl. ix,
 figs. 16, 17, 1844. Straits of Malacca.
 „ „ „ M, p. 373. Umkomaas (Burnup).

Specimens are in the British Museum labelled Natal (Burnup).

A series of five in the British Museum marked Str. of Macassar (Belcher) and bearing a label in Hinds' writing beneath the tablet may probably be accounted types.

Very widely distributed in the east and in the Pacific.

Nassarius gemmulatus (Lamarck).

Buccinum gemmulatum Lam. Anim. sans Vert., vii, p. 271, Aug.
 1822. Hab. ?.

Nassa clathrata Lam. Tableau Encycl. Méth., Vers., iii, pl. 394,
 fig. 5a, b, 1827.

„ *gemmulata* Lam. M, p. 373. Durban.

A common Indian Ocean species.

Nassarius horridus (Dunker).

Buccinum horridum Dunker. Zeitschr. f. Malakozool. iv, p. 59,
 Apr. 1847.

„ *scabrum* Dunker (*non* Anton, 1839). *Op. cit.*, iii, p. 171,
 Nov. 1846. *Patria ignota*.

Nassa horrida Dunker. H, p. 5. Natal.

Durban (British Museum and H. M'Clelland). The shells are exactly like New Caledonian examples.

Nassarius kochianus (Dunker).

Buccinum kochianum Dkr. Zeitschr. f. Malakozool., iii, p. 111, July 1846. Cape of Good Hope.

„ *signatum* Dkr. *Op. cit.*, iv, p. 61, Apr. 1847. East Indies.

„ *kochianum* Dkr. A, p. 122. Cape coast.

„ *regulare* Küster. Syst. Conch. Cab. (2), Lief. 164, p. 68, pl. xii, figs. 23, 24, 1858. Cape of Good Hope (Krauss).

Nassa quantula Gould. Proc. Boston Soc. N. Hist., vii, p. 331, Sept. 21, 1860. S. Simon's Bay (Stimpson).

„ *purca* Gould. *Op. cit.*, p. 332, Sept. 21, 1860. S. Simon's Bay.

Buccinum (Nassa) kochianum Dkr. C, p. 138. False Bay and Algoa Bay.

Nassa quantula Gould. C, p. 139. False Bay.

„ *purca* Gould. C, p. 139. False Bay.

„ *coccinea* (A. Ad. MS.) Sow. D, p. 4. Port Elizabeth.

„ „ „ „ F, p. 12 and H, p. 5. Cape coast generally.

„ *crawfordi* Sow. F, p. 13, pl. iv, fig. 86, 1892. Port Elizabeth.

„ *kochiana* Dkr. H, p. 5. Table Bay (Tryon).

„ *coccinella* Sow. (*non* Lam.). H, p. 5. Algoa Bay (Gibbons).

„ *incrassata* Sow (*non* Müller). I, p. 3. Pondoland.

„ (*Hima*) *crawfordi* Sow. K, p. 28. Francis Bay.

„ *crawfordi* Sow. N, p. 23. Port Alfred (Turton).

„ *poecilosticta* Smith. N, pp. 23, 33, pl. ii, fig. 16, July 11, 1904. Port Alfred (Turton).

„ *coccinea* (A. Ad.) Sow. N, pp. 23, 33, as a synonym of *poecilosticta*.

Alectrion quantula Gould. P, p. 51. Port Alfred (Turton).

„ *poecilosticta* Smith. P, p. 51, as a synonym of *quantula*.

„ *crawfordi* Sow. P, p. 51. Port Alfred (Turton).

„ *kochiana* Dkr. P, p. 51. Algoa Bay; Port Alfred (Turton).

I do not think there can be any doubt about this extensive synonymy; a species so variable in size, coloration and build is sure to be described many times over. The earliest name for it is Dunker's *Buccinum kochianum*, and Krauss correctly called it so two years later.

Gould's *spurca* is the colour phase with a single dark peripheral band; *coccinea* Sow. is the unicolorous orange or pinkish phase; *crawfordi* Sow. has a varying number of brown spiral bands—the types have lost almost all trace of spiral sculpture through beach abrasion; *incrassata* was one of Sowerby's numerous misidentifications with European molluscs—he recants it in H, p. 5; *coccinella* Lam. (= *incrassata* Müll.) was also a misidentification; *B. signatum* was described as new under the idea that it came from the E. Indies. The error of locality is corrected by Tryon in Man. Conch., iv, p. 57.

The types of *pocilosticta* Smith (4) and of *crawfordi* Sow. (3) are in the British Museum, which also has a specimen of this species received from Krauss, unnamed, in 1840.

It is common apparently on the whole coast.

The South African Museum has examples from False Bay to Algoa Bay and Pondoland.

Nassarius kraussianus (Dunker).

- Buccinum kraussianum* Dkr. Zeitschr. f. Malakozool., iii, p. 111,
July 1846. Cape of Good Hope.
" " " " A, p. 123. Cape and Natal coasts.
Nassa küsteri Krauss in lit. A, p. 123, quoted in synonymy.
Nassa (Eione) orbiculata A. Adams. Proc. Zool. Soc., 1851, p. 102,
Dec. 7, 1852. Hab. ? (Mus.
Cuming).
Buccinum (Nassa) kraussianum Dkr. C, p. 139.
Nassa kraussiana Dkr. D, p. 4. Port Elizabeth.
" " " F, p. 12. Common at Port Elizabeth.
" " " N, p. 23. Port Alfred (Turton).
Alectrion kraussiana Dkr. P, p. 52. Albany, Port Elizabeth,
Port Alfred.

The type of *orbiculata* is in the British Museum, which also has one (Port Natal) received without name from Krauss in 1840, and series from Delagoa Bay, Algoa Bay, Buffalo River. I have seen it also from Jeffreys Bay and Coffee Bay (Grahamstown Museum).

The South African Museum has it from Algoa Bay, off East London,

43 fathoms, Natal coast and Delagoa Bay; and a specimen said to have been picked up in Table Bay.

Nassarius lentiginosus (A. Adams).

Nassa (Alectrion) lentiginosa A. Ad. Proc. Zool. Soc., 1851, p. 105,
Dec. 7, 1852. Masbate, 7 f.
(Mus. Cuming).

„ „ „ „ M, p. 373. Durban (Burnup).

Types (3) in British Museum (Mus. Cuming), which also has examples from Natal.

Indian Ocean to Philippines.

Nassarius margaritifer (Dunker).

Buccinum margaritiferum Dkr. Zeitschr. f. Malakozool., iv, p. 60,
Apr. 1847. *Patria ignota*.

Nassa (Tritia) costellifera A. Ad. Proc. Zool. Soc., 1851, p. 113,
Apr. 29, 1853. Curimas (Mus.
Cuming).

„ *margaritifera* Dkr. M, p. 373. Durban.

Types (3) of *costellifera* in British Museum.

Indian Ocean to Philippines.

Nassarius marginulatus (Lamarck).

Buccinum marginulatum Lam. Anim. sans Vert., vii, p. 278, Aug.
1822. Mediterranean, on coasts
of Barbary and Naples.

This species is claimed as South African by Krauss. There is, however, no reason to doubt the localities of Lamarck, and Kobelt is probably correct in placing it in the synonymy of *N. reticulatus* (L.).

Sowerby (F, p. 12) quotes Krauss' record and speaks of *N. marginulata* as a common Indian Ocean shell. One can only surmise what species Sowerby was thinking of: Krauss quotes Kiener's figure of *Buccinum marginulatum* (Coq. Viv., *Buccinum*, pl. xxix, fig. 117) and adds the Sunda Islands to Lamarck's Mediterranean localities. This figure is certainly a non-European shell and Kobelt (Iconogr. Europ. Meeresconch., i, p. 136) remarks that he has never seen a Mediterranean shell like it.

From Krauss' short description of his Natal shell I have little doubt that it was *fenestratus* (Marrat).

Nassarius mucronatus (A. Adams).

Nassa mucronata A. Ad. Proc. Zool. Soc., 1851, p. 105, Dec. 7, 1852. Dumaguete, Island of Negros, 11 f. (Mus. Cuming).

Types (2) in British Museum.

Collected by McClelland at Durban.

Indian Ocean to Philippines, and New Caledonia.

Nassarius myristicatus (Hinds).

Nassa myristicata Hinds. Voy. "Sulphur," ii, p. 36, pl. ix, figs. 10, 11, 1844. Cape of Good Hope.
 ,, ,, ,, A, p. 123 (quoting Hinds).
 ,, *fuscata* A. Ad. Proc. Zool. Soc., 1851, p. 112, Dec. 7, 1852. Hab. ? (Mus. Cuming).
 ,, *myristica* Sowerby. F, p. 12 (by error).

Types of *myristicata* and *fuscata* in British Museum, the former marked as received from Belcher.

Nothing further has ever transpired as to this species and its habitat. Tryon makes one of his grotesquely bad shots in suggesting its identity with the W. African *tritoniformis* Kiener.

It is much more evidently akin to a small Panama group which includes *stimpsoniana* C. B. Adams and *dentifera* Powis, and it was very satisfactory, after some search at the British Museum, to find a tablet of three from the Mus. Cuming labelled "Panama, H.C." (*i.e.* Hugh Cuming). There is, therefore, evidence that the Cape locality originated with the notoriously unreliable Belcher, and that the South African list need no longer be cumbered with this name.

Nassarius natalensis (Smith).

Nassa natalensis Smith. Proc. Malac. Soc. London, v, p. 373, pl. xv, fig. 6, Oct. 31, 1903. Natal (Ponsonby).
sturmii Rve. (*non* Phil.). Conch. Icon., viii, pl. xxii, figs. 148a, b, Dec. 1853.

Types (2) in British Museum, which also has three specimens of Reeve's *sturmii* (Mus. Cuming).

Nassarius pictus (Dunker).

Buccinum pictum Dkr. Zeitschr. f. Malakozool., iii, p. 172, Nov. 1846. *Indiæ orientales?*

Nassa filosa (Gray MS.) Reeve, Conch. Icon., viii, pl. vi, figs. 35a, b, Dec. 1853. Cagayan, 25 f. (Mus. Cuming).

„ *picta* Dkr. H, p. 5. Natal (Gibbons).

„ *filosa* Rve. M, p. 373. Durban (Burnup).

Types of *pictus* (1) and of *filosa* (2) in British Museum.

Durban examples are in the British Museum and I have seen others in McClelland's collection from the same locality.

Indian Ocean to Philippines, and in Polynesia.

Nassarius plebeculus (Gould).

Nassa plebecula Gould. Proc. Boston Soc. Nat. Hist., vii, p. 332, Sept. 1860. Ousima (Stimpson).

„ *producta* Sow. H, p. 6, pl. viii, fig. 4, 5, 1897. Durban.

Type of *producta* in British Museum. It is a poor, discoloured specimen which never ought to have been used for the foundation of a new species, and looks as if it might have been derived from ballast.

N. plebeculus was described from Japan and seems to have a very wide Polynesian range. I have also seen live specimens from Mauritius. Probably *balteatus* Pease is the same.

Nassarius plicatellus (A. Adams).

Nassa (Alectrion) plicatella A. Ad. Proc. Zool. Soc., 1851, p. 111, Dec. 7, 1852. Wallwich [sic] Bay (Mus. Cuming).

„ *plicatella* A. Ad. C, p. 138. Wallfisch Bay: rather widespread northwards on the west coast.

„ „ „ „ F, p. 12. Natal.

Types (2) in British Museum labelled "Walwich Bay" (Mus. Cuming).

Table Bay, dead (South African Museum).

Nassarius plicosus (Dunker).

- Buccinum plicosum* Dkr. Zeitschr. f. Malakozool., iii, p. 111, July 1846. Cape of Good Hope.
- „ „ „ A, p. 122. Cape.
- Nassa speciosa* A. Ad. Proc. Zool. Soc., 1851, p. 100, Dec. 7, 1852. Hab. ? (Mus. Cuming).
- „ *plicosa* Dkr. D, p. 4. Port Elizabeth.
- „ „ „ F, p. 12. Port Elizabeth.
- „ (*Arcularia*) *plicosa* Dkr. K, p. 26. Francis Bay, Algoa Bay, Simon's Bay, 70 to 100 metres.
- „ *speciosa* A. Ad. N, p. 23. Port Alfred (Turton).
- Alectrion plicosa* Dkr. P, p. 52. Simon's Bay (Stimpson); Port Alfred (Turton).
- Nassa (Alectrion) plicosa* Dkr. Q, p. 6. Off Cape Barracouta, Cape Infanta and Sebastian Bay, in deep water.

Types (3) of *speciosa* in British Museum (Mus. Cuming).

There are specimens from Port Elizabeth in the British Museum and from Simon's Bay—dredged in 1847 by the "Rattlesnake." Off Cape St. Blaize, 40 fathoms (S.A. Mus.)

The South African Museum has a long series from the Saldanha Bay, Table Bay, False Bay, Agulhas Bank, Algoa Bay, Pondoland and Natal areas, low-tide to 100 fathoms.

Nassarius pullus (L.).

Buccinum pullus L. Syst. Nat., ed. x, p. 737, 1758.

Nassa sulcifera A. Ad. Proc. Zool. Soc., 1851, p. 98, Dec. 7, 1852. Algoa Bay (Mus. Cuming).

Type of *sulfifera* in British Museum.

N. sulcifera has remained unique ever since it was first described, and the records in C, p. 138, and in F, p. 13, are copied from A. Adams.

I have carefully studied the type; it is obviously a monstrosity due to early damage; the first five whorls are those of a young *pullus* with a slight tendency to scalariformity; the last two are abnormally expanded and have a shallow channelling round the upper part. The sculpture of the last two whorls is mainly spiral, the longitudinals which are familiar on a normal *pullus* being obsolete at intervals.

I have shown the shell to several other conchologists and all are unanimous in referring it to *pullus*. It is curious that this should be the only record of *pullus* from the Cape. It and *arcularius* have an equally wide eastern and Polynesian range.

Nassarius pyramidalis (A. Adams).

Nassa (*Desmoulea*) *pyramidalis* A. Ad. Proc. Zool. Soc., 1851, p. 113, Apr. 29, 1853. Hab. ? (Mus. Cuming).

Desmoulea pyramidalis A. Ad. D, p. 4. Port Elizabeth.

Demoulia pyramidalis A. Ad. F, p. 13. Port Elizabeth.

Nassa pyramidalis A. Ad. N, p. 23. Port Alfred (Turton).

Alectrion pyramidalis A. Ad. P, p. 52. Port Alfred (Turton).

The single type specimen in the British Museum was subsequently labelled "Japan"—a locality which we know now to be erroneous. It is not obvious why it has been so persistently assigned to *Demoulia* Gray. Its nearest relation is *filmerae* Sow., which no one has ever thought of putting in *Demoulia*.

There are examples in the South African Museum from Agulhas Bank and Algoa Bay, 10 to 27 fathoms.

Nassarius rufulus (Kiener).

Buccinum rufulum Kiener. Coq. Viv., *Buccinum*, p. 89, pl. xxiv, fig. 95, 1834. Mediterranean ?

Nassa rufula Kiener. H, p. 5. Natal.

There is now no means of ascertaining what Sowerby's shells really were, but it is in the highest degree improbable that they were this W. Australian species unless derived from ballast. Without further evidence it cannot be admitted to the South African list.

Nassarius suturalis (Lamarck).

Buccinum suturale Lam. Anim. sans Vert., vii, p. 269, Aug. 1822. Hab. ?

The South African Museum has a very fresh specimen of this from Durban (No. 4741).

A widely distributed shell and recorded from Mauritius.

Gen. DEMOULIA Gray.

Demoulia Gray. Ann. Nat. Hist., i, p. 29, March 1838, as a new genus of *Buccinidae*, the type species being *D. pulchra* Gray from Sierra Leone.

In 1847 Gray altered the spelling of his name to *Desmoulea* (Proc. Zool. Soc., 1847, p. 140), but this was *ultra vires* under the International Rules and the first name must stand.

This is a small genus represented by half a dozen species all told, of which two are South African.

Demoulia abbreviata (Gmelin).

- Buccinum abbreviatum* Gmelin. Syst. Nat., ed. xiii, p. 3478, 1791.
Indian Ocean.
- Nassa globosa* Sow. Gen. Rec. and Foss. Shells, pt. 25, pl. cexlv,
fig. 6, 1825. (No locality.)
- Desmoulea abbreviata* Chem. C, p. 139. Cape.
- „ „ Wood. D, p. 4. Port Elizabeth.
- Demoulia* „ „ F, p. 13. Port Elizabeth.
- Nassa (Desmoulea) abbreviata* Chem. K, p. 28. Francis Bay, 80
to 100 m.
- „ (*Demoulia*) *abbreviata* Gmel. N, p. 23. Port Alfred (Turton)
- Desmoulea abbreviata* Gmel. P, p. 52. Port Alfred (Turton).

I have also seen it from Gordon's Bay (Kimberley Museum).

There is a series from False Bay to Algoa Bay and Natal, 18 to 52 fathoms, in the South African Museum.

Demoulia retusa (Lamarck).

- Buccinum retusum* Lam. Anim. sans Vert., vii, p. 270, Aug. 1822.
Hab. ?
- Nassa ventricosa* Lam. Tableau Encycl. Méth., Vers, iii, pl.
cccxciv, figs. 3a, b, 1827. (No locality.)
- Desmoulea retusa* Lam. C, p. 139. Cape.
- „ „ „ D, p. 4. Port Elizabeth.
- Demoulia* „ „ F, p. 13. Port Elizabeth.
- Nassa* „ „ N, p. 23. Port Alfred (Turton).
- Desmoulea* „ „ P, p. 52. Algoa Bay, Port Alfred, Port
Natal.

Tryon (Man. Conch., iv, p. 245) erroneously assigns *N. ventricosa* Lam. to *N. mutabilis* L. He evidently looked at fig. 4 on pl. 394, instead of fig. 3.

The South African Museum has it from False Bay, Mossel Bay, Agulhas Bank and the Zululand coast, 5 to 55 fathoms.

The following species from Tertiary and recent deposits have been recorded or are in the South African Museum collections :

- Nassarius arcularius*. 375 feet above sea-level at Umgeni, Durban.
,, *coronatus*. Durban.
,, *kochianus*. Raised beach between mouths of Sunday's and Koega Rivers.
,, *kraussianus*. Same locality as *kochianus*; near Red-house Station, 7 miles from mouth of Zwartkops River; Pleistocene deposits at Port Elizabeth (Tr. Geol. Soc. S. Afr., 1909, xii, p. 112); raised beaches at mouths of Keurbooms and Little Brak River, and deposits at mouth of Knysna River (Rep. Geol. Comm., C.G.H., 1899, p. 61 and 1905, p. 293); excavations for grain elevator and bridges at Durban and Congella.
,, *plicatellus*. Raised beach at Geelbek, Saldanha Bay.
,, *plicosus*. Tertiary limestone at Hoetjes Bay (Saldanha Bay).

BIBLIOGRAPHY.

- (A) KRAUSS, Dr. F., 1848.—Die Südafrikanischen Mollusken.
(B) ,, ,, 1852.—Archiv für Naturgeschichte, xviii, Bd. 1.
(C) MARTENS, 1874.—Jahrbücher Deutsch. Malak. Gesellschaft, i.
(D) SOWERBY, Jan. 1886.—Journal of Conchology, v.
(E) ,, Oct. 1889.—Journal of Conchology, vi.
(F) ,, 1892.—“Marine Shells of South Africa.”
(G) ,, Apr. 1894.—Journal of Conchology, vii.
(H) ,, 1897.—Appendix to “Marine Shells of South Africa.”
(I) ,, 2nd Apr. 1900.—Proc. Malac. Soc. London, iv.
(J) SMITH, Oct. 1901.—Journal of Conchology, x.
(K) MARTENS, 1903.—Wiss. Ergebn. Deutsch. Tiefsee-Expedition, vii, 1^e Lief.
(L) SOWERBY, 8th July 1903.—“Marine Investigations in South Africa,” ii, No. 3.
(M) SMITH, 31st Oct. 1903.—Proc. Malac. Soc. London, v.

- (N) SMITH, 11th July 1904.—Journal of Malacology, xi.
 (O) „ June 1906.—Ann. Natal Govt. Museum, i, Part I.
 (P) BARTSCH, 28th July 1915.—U.S. Nat. Museum Bulletin 91 (Rept. on the Turton Collection of South African Marine Mollusks, etc.).
 (Q) ODHNER, 1923.—Göteborgs K. Vet. Handlingar, xxvi, No. 7 (Meddel. Göteborgs Mus. Zool., Avdelning 23).

INDEX OF SPECIFIC NAMES.

Those regarded as synonyms or as erroneously included in the S. African fauna are in italics, and as regards termination are left as quoted.

A	PAGE	I	PAGE
abbreviata (Gmel.)	326	<i>incrassata</i> Sow. (<i>non</i> Müller)	319
algidus (Rve.)	313		
<i>analogica</i> Sow.	316	K	
areularius (L.)	314	kochianus (Dkr.)	319
		kraussianus (Dkr.)	320
B		<i>küsteri</i> Krauss	320
babylonicus (Watson)	314		
bicallosus (Smith)	314	L	
		<i>labiosa</i> J. Sow.	316
C		<i>laevigata</i> Marrat	315
capensis (Dkr.)	315	lentiginosus (A. Ad.)	321
<i>cerotina</i> Rve.	315		
circumtextus (Mts.)	316	M	
<i>clathrata</i> Lam.	318	margaritifer (Dkr.)	321
<i>coccinea</i> Sow.	319	<i>marginulata</i> Lam.	321
<i>coccinella</i> Sow. (<i>non</i> , Lam.)	319	mueronatus (A. Ad.)	322
coronatus (Brug.)	317	<i>myristica</i> Sow.	322
<i>costellifera</i> A. Ad.	321	<i>myristicata</i> Hinds	322
<i>craftfordi</i> Sow.	319		
		N	
D		natalensis (Smith)	322
desmoulioides (Sow.)	317		
		O	
E		<i>orbiculata</i> A. Ad.	320
eusulcatus (Sow.)	317		
		P	
F		pictus (Dkr.)	323
fenestratus (Marrat) (<i>err. typ. for</i>		plebeculus (Gould)	323
fenestratus)	317	plicatellus (A. Ad.)	323
filmerac (Sow.)	318	plicosus (Dkr.)	324
<i>filosa</i> Rve.	323	<i>poecilosticta</i> Smith	319
<i>fuscata</i> A. Ad.	322	<i>producta</i> Sow.	323
		<i>pulchella</i> A. Ad.	315
G		pullus (L.)	324
gaudiosus (Hinds)	318	pyramidalis (A. Ad.)	325
gemmaulatus (Lam.)	318		
<i>glabella</i> Marrat	315	Q	
<i>globosa</i> Sow.	326	<i>quantula</i> Gould	319
H			
horridus (Dkr.)	318		

R		PAGE			PAGE
<i>regulare</i> Küster		319	<i>sturmii</i> Ree. (non Phil.)		322
<i>retusa</i> (Lam.)		326	<i>sulcifera</i> A. Ad.		324
<i>rufula</i> Kiener		325	<i>suturalis</i> (Lam.)		325
S			T		
<i>scabrum</i> Dkr.		318	<i>trifasciata</i> A. Ad.		316
<i>serotina</i> A. Ad.		315			
<i>signatum</i> Dkr.		319	V		
<i>speciosa</i> A. Ad.		324	<i>ventricosa</i> Lam.		326
<i>spurca</i> Gould		319			

IV. FAMILIES TEREBRIDAE, COLUMBARIIDAE,
THAIDIDAE, ARCHITECTONICIDAE.

TEREBRIDAE.

There is nothing of very special interest to record in this family. All the species mentioned have been reported from South Africa before, but our records of *Terebra* are so scanty that any additional information is worth chronicling.

Terebra affinis Gray.

T. affinis Gray. Proc. Zool. Soc., 1834, p. 60 (25th Nov. 1834).

Natal: previously known from Durban (Burnup).

T. evoluta Deshayes.

T. evoluta Desh. Proc. Zool. Soc., 1859, p. 292 (Oct. 1859).

Umhloti River, N. by E., 2 miles, 27 fathoms: Durban, where it was previously found by Burnup.

T. fictilis Hinds.

T. fictilis Hinds. Thes., i, p. 183, pl. xlv, figs. 109, 110
(Jan. 15, 1845).

Durban, whence it is also recorded by Sowerby: the South African Museum also has a series of "live" shells labelled Natal.

T. longiscata Deshayes.

T. longiscata Desh. Proc. Zool. Soc., 1859, p. 294 (Oct. 1859).

O'Neil Peak, N.W. $\frac{1}{4}$ W., 9 miles, 95 fathoms. Durban (Sowerby).

T. laevigata Gray.

T. laevigata Gray. Proc. Zool. Soc., 1834, p. 61 (25th Nov. 1834).

Natal, whence Sowerby also records it.

T. nebulosa Sowerby.

T. nebulosa Sow. Tankerville Cat., App., p. xxv, 1825.

Natal. Durban (Sowerby).

COLUMBARIIDAE nov. fam.

The group-name *Columbarium*, when described by Martens in Conchol. Mittheilungen ii, Hefte i and ii, p. 105, 1881, was assigned as a subgenus to *Pleurotoma*, and we find it in the same family in his paper on the Gastropods* of the Tiefsee-Expedition, published in 1903.

Much more recently Dall adopts the same classification in his synopsis † of the recent and fossil groups of the *Turridae*.

In 1921, however, Peile was able to examine complete radulae of *C. pagoda* (Lesson), and reported that its true position was near the *Muricidae*.‡ Previously in 1881, Schacko § had figured two teeth supposed to come from Martens' new species *spinicineta*, but Peile is surely right in supposing these figures to represent something crustacean.

The protoconch of *Columbarium* is smooth, bulbous and two-whorled, remarkably similar to that of *Neptunea despecta* (L.)

The operculum has an apical nucleus, not subapical as in the typical group of the *Muricidae*, and herein suggests comparison with the *Fusinidae* or with the genus *Colus* and others in the *Buccinidae*.

The *Columbarium* operculum, however, is not unguiform in shape, but pear-shaped, narrowing very regularly and rapidly on either side to an acute point.

I venture to suggest that under the circumstances it will be better to establish a family *Columbariidae* with near relationship on one side to the *Muricidae*; a more remote one possibly on the other side to the *Buccinidae*.

* Wiss. Ergebn. Deutsch. Tiefsee-Exp., vii, Lief. i, p. 92.

† Proc. U.S. Nat. Mus., liv, p. 324, 1918.

‡ Proc. Malac. Soc. Lond., xv, p. 13, fig. 1.

§ Conchol. Mitth., tom. cit., pl. xxiv, figs. 1-2.

Columbarium formosissimum n. sp.

(Plate XXV, fig. 1.)

Shell with the usual bulbous, smooth protoconch of 2 whorls, and 8 others all white: whorls with an extremely acute infra-median keel with obtuse triangular projections at right angles to the axis, there being 10 to 11 of these on each of the last 2 whorls: a second keel appears on the lower part of the body-whorl at the insertion of the peristome, and about two-thirds of the way down between upper and lower keel is a third, which has more the character of a raised spiral thread, with traces of less conspicuous threads both above and below; shell imperforate; canal perfectly straight, 21 mm. long, encircled by a series of regular, oblique spiral threads; the area on the whorls between suture and infra-median keel is smooth except for a close succession of wavy growth-lines. Aperture small, rather irregularly piriform. Operculum broadly piriform, tapering sharply to an acute nuclear apex.

Long., 47 mm.; diam. max., 11 mm.

Hab., Cape St. Blaize, N. by E. $\frac{1}{4}$ E., 65 miles, 90 fathoms, living (Type: S.A.M., No. A3501); Cape Seal, N. by W. $\frac{1}{2}$ W., 55 miles, 87 fathoms, dead (S.A.M., No. A3499); Cape St. Francis, N.E., 29 miles, 75 fathoms, living (S.A.M., No. A3500); Glendower Beacon (near Port Alfred), N. $\frac{1}{2}$ W., 16 miles, 66 fathoms, dead (S.A.M., No. A3498).

Columbarium natalense n. sp.

(Plate XXV, fig. 2.)

This shell bears considerable resemblance to *C. canaliculatum* Martens,* but is not canaliculate at the suture. There are 12 up-turned spines on the shoulder keel on each of the last 2 whorls; between the suture and this keel are 3 broad, equally spaced spiral cords and 4 spiral threads, the latter being closer together and crossing the bases of the spines; a second less prominent keel encircles the lower part of the body-whorl, starting from the insertion of the peristome; between this and the row of spines are 4 spiral cords, and below this the shell is regularly ornamented with spirals to the base of the canal; a scaly effect is given to most of the shell by a series of fine axial raised threads; these, however, are very easily abraded and therefore appear irregular. The bulbous protoconch is smooth and white, the rest of the shell brownish. Aperture almost circular.

* Wiss. Ergebn. Deutsch. Tiefsee-Exp. vii, Lief. 1, p. 92, pl. ii, fig. 7.

Long., 37 mm. ; diam. max., 11 mm.

Hab., Cape Natal, W. $\frac{3}{4}$ N., 12 miles, 85 fathoms, one dead shell (S.A.M., No. A3497).

The specimen is not quite perfect, hence the gap below the aperture.

THAIDIDAE.

Latiaxis capensis n. sp.

(Plate XXVI, fig. 3.)

A beautiful white shell of the *deburghiae* type, but smaller, more compact, with the laminated processes of the coronet pointing upwards and gradually recurved over the subsutural area. The shell is turreted, with a protoconch of about 2 whorls, and 6 other whorls. There is a series of triangular laminae—as mentioned above—round the shoulder of each whorl, some 10 in number on the last and last but one, leaving a sort of parapet between these and the suture. The laminae continue downwards across the whorl as obtuse, irregular, rather inconspicuous ridges. The whole shell is spirally ridged from the periphery upwards ; below the periphery the spirals become very much broader and flatter.

Shell with a funnel-shaped umbilicus, the columella being prolonged round it on the side away from the aperture in an arcuate series of imbricated scales. Canal narrow, recurved, 3 mm. long. Aperture rather small, measuring 8 mm. by 5 mm.

Long., 21 mm. ; diam. max., 13 mm.

Hab., Sandy Point, N. $\frac{1}{4}$ E., 10 miles, 95 fathoms, one specimen (S.A.M., No. A3522).

ARCHITECTONICIDAE.

Architectonica perspectiva (L.).

Trochus perspectivus L. Syst. Nat., ed. x, p. 757, 1758.

A common Indian and Pacific Ocean species which just reaches the Cape. Has been recorded for Natal. Dredged by the "Pieter Faure" as follows :

Umvoti River, N. by W. $\frac{1}{2}$ W., 4 miles, 27 fathoms.

Cape Natal, W. by N., 4 miles, 47 fathoms.

Cape Vidal, 9 miles, 90 fathoms.

The South African Museum also has this species from Delagoa Bay.

A. reevei (Hanley).

Solarium reevei Hanley. Proc. Zool. Soc., 1862, p. 204, 1862.

Gt. Fish Point, 100 fathoms.
New to the South African list.

Heliacus Orbigny, 1842.

Gray in Proc. Zool. Soc., 1847, p. 151, gives his own genus *Torinia* precedence, quoting it as of 1840 and 1842. These two references are to different editions of the "Synopsis of the Contents of the British Museum," and are fully explained by Iredale in Proc. Malac. Soc. (London), x, pp. 294-309. The 1840 usage of *Torinia* is a *nomen nudum*; the 1842 edition gives a short comparative account of operculum only, quoted on p. 308. It hardly seems a sufficient diagnosis on which to found a genus, and the reasons for rejection given by Iredale on p. 301 may well be applied to this case at any rate.

Heliacus hybridus (L.)

Trochus hybridus L. Syst. Nat., ed. x, p. 757, 1758.

Tongaat.

H. variegatus (Gmelin).

Turbo variegatus Gm. Syst. Nat., ed. xiii, p. 3608, 1791.

Tongaat.

H. asper (Hinds).

Solarium asperum Hds. Proc. Zool. Soc., 1844, p. 23, 1844.

This species was dredged dead in the Straits of Makassar. Two have been taken by the "Pieter Faure," both dead, in fairly deep water, viz.:

Cape Natal, W. by N., 6 miles, 54 fathoms, a perfect specimen.

Umhloti River, N.N.W., 3 miles, 27 fathoms, a broken shell.

These have both been compared with Hinds' type specimen in the British Museum.

H. africanus Bartsch.

Heliacus africanus Beh. U.S. Nat. Mus. Bull. 91, p. 123, pl. xxiv.
figs. 1, 3, 5, 28th July 1915.

This is the *Heliacus* that has been frequently recorded as *dorsuosus*

Hinds and seems widely distributed in South Africa. It is unquestionably very closely related but can, I think, be discriminated. The two peripheral keels in *dorsuosus* are more nearly of a size and between them runs a distinct spiral line, varying in degree from a raised thread to quite a strong beaded cord. In *africanus* the lower keel is generally the smaller and stands out less, and there is no intercarinal line.

The beading in *dorsuosus* is throughout very regular in size and shape, the beads or tubercles being mainly elongate-oblong; in *africanus* they are elongate, but rounded elongate, and by no means so regular in size.

The form mentioned by Bartsch on p. 124 with "an umbilicus fully twice as wide" as the type of *africanus* is puzzling, but seems to grade into the type. Much more material is needed. It is very flat and has the beading, at any rate, on the body-whorl, even more narrowly elongate than *dorsuosus*, but the beads are rounded at the narrow ends and not rectangular, as already noted in typical *africanus*.

The South African Museum has specimens of the type form from Tongaat.

Heliacus sp.

A very minute specimen was dredged in 22 fathoms off Gt. Fish Point.

Heliacus petasus * n. sp.

(Plate XXVI, fig. 4.)

Shell thin, discoidal, very flat, pale cream-coloured, semi-transparent; protoconch white, smooth, two-whorled; there are six other whorls, the last acutely carinate, all ornamented with irregularly spaced, raised tubercled spirals, both tubercles and spirals varying much in degree; there is a partial arrangement of one fine thread between each pair of tubercled spirals, but it is frequently varied; there are seven of the larger spirals on the last whorl. Umbilicus large and crenulate throughout, with a maximum diameter of 7 mm.

The base of the shell is slightly concave towards the periphery and more regularly sculptured; outside the umbilical crenulation is a strongly tubercled spiral ridge, and next to this two more threadlike tubercled spirals; the rest of the base is marked with plain or almost plain spirals, which become finer and closer together as they approach

* A broad-brimmed hat.

the periphery ; in the type there are twelve of these altogether, the first two being particularly broad and flat.

Aperture shaped very much like the section of a valve of *Hemiacardium cardissa* in miniature.

Alt., 5 mm. ; diam. max., 16 mm.

Hab., Scottburgh, dredged in 92 fathoms, one dead (S.A.M., No. A3579).

The only recent species that bears any resemblance to this is *dilectus* Deshayes, described in "Cat. Moll. Ile de Réunion," p. 68, pl. ix, figs. 3-6, but the two species differ in size, proportions and details of sculpture.